grams—a difference of 33 per cent. When the nerve is united again motility comes earlier than the electrical reaction. In several of the experiments the difference seemed to be considerable, as the animals could use the operated limb as well as the other limb long before electrical reaction was observed. If the muscles have thus resumed their activity, and in consequence of a return of nerve conduction, one may suppose that this also may be shown by changes in the microscopical appearance of the muscles or in the cessation of atrophy or by increasing weight. To examine these circumstances, the third series of experiments was made in the following way: The peroneal nerve was divided on both sides. On the one side one of the ends was pulled out through the slit in the fascia and fixed subcutaneously, while the slit for the rest was closed with catgut. In this way the nerve was prevented from uniting. On the other side the divided nerve was permitted to unite. The animals were killed after some days' interval, and both the united nerve and the central and peripheral ends of the non-united nerve were hardened for microscopical examination. The muscles supplied by the peroneal nerve were carefully dissected out as similarly as possible on both sides and were then immediately weighed. A piece of the muscles was cut out from corresponding places of the muscles on both sides and hardened in formalin for microscopical examination. JELLIFFE.

MASSAGE IN LOCOMOTOR ATAXIA. Dr. de Frumerie (Le Progrès Médical, Feb. 28, 1903).

In every manual treatment it is necessary first to determine whether the effect desired is stimulation or sedation. In tabes the author confines his massage to sedative measures, avoiding any brusque or energetic movements which so often lead to hyperesthesia. The suitable types of manipulation for this disease are superficial or deep effleurage, vibratory motion of the abdominal viscera, and prolonged compression, the last sometimes overcoming the lightning pains when energetic measures have had no effect. For paralysis of the bladder the organ should be emptied of its infected urine and one-third filled with boric acid solution; then the curved fingers are pressed down behind the pubes and gentle tremulous motion set up. The perineal region may be subjected to effleurage and continuous pressure. When there are contractures, one must avoid the contracted muscles, the flexors, and by every means possible try to strengthen their antagonists, the extensors. The flexors then should be slowly and cautiously stretched by passive motion. Where there are no special contractures, a general stretching or extension may be brought about as follows: The patient lies on a bed and places the feet against the chest of the operator; then, without bending his knees, he is seized by the hands and pulled forward, the operator at the same time giving him a tremulous movement. This affects the spinal cord, the sciatics, the ligamentous and muscular tissues of the back, and the brachial plexus, without fear of injury to the femoral neck, which is so fragile in certain tabetics. BASTEDO.

MYASTHENIA GRAVIS. Charles S. Myers (Journal of Pathology and Bacteriology, Sept., 1902).

Three signs may be described as pathognomonic of myasthenia gravis. They are (1) ready fatigue of certain or general voluntary movements either to a succession of tetanizing currents applied to the nerve or to volitional impulses descending from the brain. (2) The exacerbations and remissions shown in the course of the disease, and (3) the tendency to a fatal implication of the muscles innervated by the bulb. To these must be added other very important general signs mainly of a negative character. (4) There is no reaction of degeneration; the muscles react to a faradic current of normal intensity, or more often require one somewhat stronger than normal. (5) The muscles, as a rule, show neither atrophy nor fibrillar contraction. (6) Sensation and intelligence are unimpaired. (7) The reflexes may be normal, are often feeble, but perhaps most frequently are somewhat exaggerated. Clonus is absent. (8) Purely voluntary muscles are alone affected. The mechanisms of defecation and micturition are never impaired. (9) The myasthenia, although often unequally marked on the two sides, is almost invariably bilateral. Myasthenia gravis is distinguished from hysteria by absence of stigmata or disturbance of sensation; from clonic bulbar paralysis by the extraordinary remission and exacerbation of symptoms, the general absence of muscular atrophy, of fibrillary contractions and degenerative electrical variations. Of 22 cases on which autopsies were performed, 8 showed no pathological condition of the nervous system. In 3 cases minute aneurisms or vascular dilatations were noted; and in 2 the cerebral arteries appeared thickened. Eight cases examined by Nissl's method, in 3 slight chromatolysis was found. Hemorrhages in the central nervous system always recent and frequently numerous were found in 6 cases. The peripheral nerves and muscle fibers were examined several times, yielding varying changes in the muscles and rarely changes in the nerves. The writer does not believe that either the muscles or the higher parts of the brain are primarily affected. The disease probably arises from some autogenetic-toxine. The end plate is affected and with it the entire neurone, secondarily. W. B. NOYES.

THE DIAGNOSIS OF BRAIN ABSCESSES. Herman H. Hoppe, M.D. (Journal American Medical Association, March 14, 1903).

Given a certain group of signs and symptoms which lead us to suspect the presence of a brain abscess, the first point is tracing the source of infection. Bergman says that without the Streptococcus pyogenes aureus there cannot be a brain abscess. But to find the external source of infection is difficult. Bergmann divides brain abscesses into four groups. (1) Traumatic abscess caused by an open scalp wound or a fractured skull. (2) Those abscesses resulting from a purulent inflammation of bone or bony cavities, (a) otitic abscess, (b) rhinogenetic abscesses, (c) abscesses due to caries of the bones of the skull. (3) Tuberculous abscesses. (4) Metastatic abscesses. The symptoms of brain abscess may be grouped as follows: (1) Symptoms due to deep-seated suppuration, (2) symptoms due to intracranial pressure, (3) focal symptoms. Fever and other signs of sepsis, chills, localized pain and tenderness, vomiting and, at times, distinct mental symptoms are important symptoms. Optic neuritis is more frequent than in brain tumor, but not so well developed. If it is absent the abscess is either very acute or small. It is most marked in abscess of the frontal lobe. Focal symptoms help much to make the diagnosis if the abscess is present in the psychomotor area, little if present in the occipital, temporal or frontal lobes. The closer the abscess to gray matter, and the greater the destruction of tissue, the more focal signs are developed. A large abscess of the centrum ovale may exist without focal signs.

W. B. NOYES.